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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,233	04/14/2004	Frank Jordens	2001P16038WOUS	6342
46726	7590	11/24/2006	EXAMINER	
BSH HOME APPLIANCES CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 100 BOSCH BOULEVARD NEW BERN, NC 28562			WARTALOWICZ, PAUL A	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 11/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/824,233

Applicant(s)

JORDENS ET AL.

Examiner

Paul A. Wartalowicz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-17, 19-25, 27-30 and 32-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-12, 18, 26 and 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-17, 19-25, 27-30 and 32-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

Applicant's arguments filed 8/31/06 have been fully considered but they are not persuasive.

Applicant argues that Chay and Stiles do not disclose a binder which is "a colloidal solution comprising one of an inorganic polymer and inorganic sol, wherein said colloidal solution is formed with at least..." and Chay and Stiles instead have binders which are formed without the use of an inorganic polymer or an inorganic sol.

However, Chay teaches the amorphous binder phase consisting of reaction products of oxides of boron and silicon and alumina to form a borosilicate glass. This describes a polymerization glass process. Stiles is not relied upon to teach an inorganic polymer in the binder but does teach that the binder comprises silica.

Applicant argues that Chay and Stiles are silent with respect to forming second pores that allow for solids and liquids to enter therein and while Chay discusses forming ceramic catalysts having high porosity, Chay is silent with respect to the size of the porosity and specifically with whether said pores prevent a solid or liquid from entering therein.

However, Stiles discloses porosity tests conducted to determine how much water is trapped by the coating and indicated the porosity of the catalytic coating (col. 8, lines 34-68). Chay similarly teaches that the coating absorbs water (col. 12, lines 12-16). Chay is not relied upon to teach the size of the porosity of the particles and whether or

not solids and liquids are prevented from entering said pores. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that Chay and Stiles do not disclose a substrate with a self-cleaning coating thereon as recited in claim 37; the prior art does not disclose the coating having particles having first pores therein, wherein spaces between adjacent particles form second pores which are larger than the first pores such that the first pores prevent a solid or liquid from entering therein and the second pores allow for solids and liquids to enter therein.

However, Chay teaches that the catalyst particles have an optimum combination of porosity and hardness. It would have been obvious to one of ordinary skill to find the optimum porosity based upon the desired end properties of the product. Stiles teaches that the particles are substantially water insoluble (col. 5, lines 30-37).

Applicant argues that Chay and Stiles do not disclose a substrate with a self-cleaning coating thereon as recited in claim 38; including the coating having a binder which forms third pores which are smaller than second pores such that the third pores prevent a solid or liquid from entering therein and the second pores allow for solids and liquids to enter therein.

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However, the prior art of record teaches a substantially similar product as that of the claimed invention such that the properties of the product of the prior art of record are substantially similar as those of the claimed invention.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 13, and 33-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Examiner requests the Applicant to point out the recitation in the specification where support for the amendments are located.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 13-17, 23-25, 28-30, 33, 34, 35, 36, 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chay (3888790) in view of Hoke et al. (U.S. 6517899).

Chay teaches a porous ceramic catalytic coating for use in self-cleaning ovens and pollution control devices (Column 1, lines 10-12) wherein the coating includes a silicate binder (Column 3, lines 37-44) and also includes porous particles of a refractory material which may be metal oxides of Si, Al, Ti, or Zr (Column 3, lines 4-12) and which porosity includes open-cell pores. Chay teaches the metal oxides (refractory) particles are a "fine powder" (Column 3, line 29) and further that the oxides particles be less than 74  $\mu\text{m}$  (Column 5, lines 24-23). Chay also teaches that the coating is porous and able to absorb water (col. 12, lines 13-17) such that it would be obvious that the pores between the catalytic particles allow for solids and liquids to enter therein.

Further, with particular respect to claim 13, as the binder taught by Chay is a silicate it would inherently be "substantially permanently temperature resistant up to substantially 500°C" as claimed.

As to the limitation that the binder comprises an inorganic polymer or an inorganic sol, Chay teaches an amorphous binder phase comprising borosilicate glass, this disclosure is substantially similar to that of a glass polymer (col. 3, lines 37-45).

If this disclosure does not meet the limitation of an inorganic polymer, Hoke et al. teach a process for making catalytic compositions (col. 1, lines 18-19) wherein it is known to use water based silicone polymer emulsions as binders in high temperature applications for the purpose of producing a silica network (col. 51, lines 39-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a water based silicone polymer emulsions as binders in high temperature applications in Chay in order to produce a silica network (col. 51, lines 39-52) as taught by Hoke et al.

As to the limitation wherein said first pores are less than 1  $\mu\text{m}$  in diameter in order to prevent a solid or liquid from entering therein, Chay teaches that the oxides give the optimum combination of porosity and hardness.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the pore size, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2<sup>nd</sup> 272, 205 USPQ 215 (CCPA 1980). The artisan would have been

motivated to optimize the pore size by the reasoned explanation that Chay teaches that it is known to optimize porosity to achieve the desired properties of the end product.

As to claims 35-36 and 38, the combined prior art teach a substantially similar product as that of the claimed invention (i.e. porous particles, binder) such that any properties of the membrane formed by the binder of the combined prior art would be substantially similar as the properties of the membrane formed by the binder of the current invention.

Claims 13-15, 17, 20-25, 32, 33, and 34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Stiles (3993597) in view of Hoke et al. (U.S. 6517899) and Watanabe (5051185).

Stiles teaches a catalytic composition for coating the surfaces of cooking devices (Column 1, lines 13-15) wherein the coating includes a silicate binder (Column 4, lines 52-58) and porous metal oxide particles which may be a refractory material such as oxides of Al, Ti, B, Si and specifically teaches TiO<sub>2</sub>, ZrO<sub>2</sub> and SiO<sub>2</sub> (Column 5, lines 30-40 and 45-49) which have open porosity. Stiles additionally teaches that other oxides may be added for pigment (Columns 5-6, lines 64-4). Stiles teaches that water is absorbed in the coating (col. 8, lines 54-68) such that it would be obvious that the pores between the catalytic particles allow for solids and liquids to enter therein.

Further, with particular respect to claim 18, as the binder taught by Chay is a silicate it would inherently be "substantially permanently temperature resistant up to substantially 500°C" as claimed.



If this disclosure does not meet the limitation of an inorganic polymer, Hoke et al. teach a process for making catalytic compositions (col. 1, lines 18-19) wherein it is known to use water based silicone polymer emulsions as binders in high temperature applications for the purpose of producing a silica network (col. 51, lines 39-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a water based silicone polymer emulsions as binders in high temperature applications in Stiles in order to produce a silica network (col. 51, lines 39-52) as taught by Hoke et al.

As to the limitation wherein said first pores are less than 1  $\mu\text{m}$  in diameter in order to prevent a solid or liquid from entering therein, Stiles teaches that the particles are substantially water-insoluble (col. 5, lines 30-35). Stiles is however silent as the pore size of these particles.

Watanabe et al. teaches that is known for particles that are water-insoluble, the pore size of said particles is less than 50000 angstroms (0.5  $\mu\text{m}$ , col. 9, lines 35-41)

It would have been obvious to one of ordinary skill in the art to provide particles with a pore size of are less than 1  $\mu\text{m}$  in diameter because Stiles teaches that the particles are substantially water-insoluble (col. 5, lines 30-35) and it is known that particles that are porous and water-insoluble have a diameter of less than 50000 angstroms (0.5  $\mu\text{m}$ , col. 9, lines 35-41) as taught by Watanabe et al.

As to claims 35-36 and 38, the combined prior art teach a substantially similar product as that of the claimed invention (i.e. porous particles, binder) such that any properties of the membrane formed by the binder of the combined prior art would be

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substantially similar as the properties of the membrane formed by the binder of the current invention.

Claim 19 and 27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chay (3888790) in view of Hoke et al. (U.S. 6517899) as described with respect to claim 13 above.

Chay teaches that the binder can be formulated from commercially available frits (Column 5, lines 3-7) and that upon mixing with the other coating components such be ball milled since the frit must be reduced to a fine powder of less than 74 $\mu$ m (Column 6, lines 50-55).

Claims 16, 19, and 27-30 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Stiles (3993597) in view of Hoke et al. (U.S. 6517899) and Watanabe (5051185) as described with respect to claim 13 above.

Stiles teaches in several examples that the particle sizes for the various components are: less than 35  $\mu$ m (Column 9, line 28; Column 11, lines 11), less than 25  $\mu$ m (Column 11, line 18), and in the range of 2-15  $\mu$ m (Column 11, lines 47-48). If this does not anticipate the claimed ranges for each specific component, it would be obvious for the components to have these sizes because to provide a more even coating and the desired porosity.

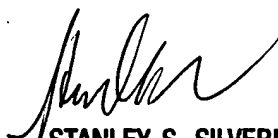
***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Wartalowicz whose telephone number is (571) 272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

  
**STANLEY S. SILVERMAN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Paul Wartalowicz", with a stylized, flowing script.

Paul Wartalowicz  
November 15, 2006